

Isoset™ UX 160 WD3-A322 100 ADHESIVE
730773

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Ashland	Regulatory Information Number	1-800-325-3751
P.O. Box 2219	Telephone	614-790-3333
Columbus, OH 43216	Emergency telephone number	1-800-ASHLAND (1-800-274-5263)

Product name	Isoset™ UX 160 WD3-A322 100 ADHESIVE
Product code	730773
Product Use Description	No data

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid

WARNING! MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION. MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN, CAUSE IRRITATION AND BURNS.

Potential Health Effects

Exposure routes

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion, This product is an inert plastic when fully cured, and as such, is nonhazardous. Exposure to unreacted chemicals can occur when handling the individual components in pails or when using cartridges from the time of dispensing until the mixed material has cured. The mixed material is actually curing as it is dispensed in an increasingly viscous form, making it unlikely to present an inhalation hazard. The semi-viscous mixture does not flow like a liquid when dispensed, thus minimizing the possibility of accidental skin contact.

Eye contact

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin contact

Can cause skin irritation. Symptoms may include redness and burning of skin, and other skin damage. Skin contact with adhesive that is not fully cured may cause an allergic skin reaction or other skin irritation.

Ingestion

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Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

Inhalation

Breathing of vapor or mist is possible. This product contains 4,4'-diphenylmethane diisocyanate (MDI). Breathing MDI may cause an allergic respiratory reaction with difficult breathing and chest pain. The onset of respiratory symptoms may be delayed for several hours after exposure. Previously sensitized individuals should avoid exposure to all diisocyanates because exposure to even very small amounts can cause asthma-like attacks in these individuals. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material:., Skin, Upper respiratory tract, lung (for example, asthma-like conditions)

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:., stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), runny nose, Cough, Headache, chest pain, lung edema (fluid buildup in the lung tissue), Exposure to this product (or a component) may cause an allergic reaction (narrowing of the air passages of the lungs resulting in difficult breathing, tightness in the chest, coughing and wheezing) in some sensitive individuals. Other symptoms of an allergic reaction may include itchy and watery eyes, runny and stuffy nose, sweating, flushing, hives, rapid heart rate, and lowered blood pressure., Difficulty in breathing

Target Organs

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals:., nasal damage, lung damage, Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans:., effects on lung function

Carcinogenicity

In a two-year inhalation study in rats, exposure to polymeric methylene bisphenylisocyanate (MDI) aerosol caused a significant increase in benign (noncarcinogenic) lung tumors, along with a single carcinogenic lung tumor, at the highest dose only (6 mg/m³). The tumors occurred along with irritation of the respiratory tract and the accumulation of a yellow material in the lungs. There was irritation only at 1.0 mg/m³ and no effect at 0.2 mg/m³. MDI is not listed as carcinogenic by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA). The International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) have determined that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz or

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crystalite. In addition, IARC has determined that there is sufficient evidence for the carcinogenicity of quartz and cristobalite in experimental animals. Among individuals with silicosis, lung cancer occurs more frequently in those who smoke.

Reproductive hazard

This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

3. COMPOSITION/INFORMATION ON INGREDIENTS

PART A

Hazardous Components	CAS-No.	Concentration
POLYMETHYLENE POLYPHENYL ISOCYANATE	9016-87-9	>=20-<30%
4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	>=20-<30%
METHYLENE DIPHENYLISOCYANATE	26447-40-5	>=10-<15%

PART B

Hazardous Components	CAS-No.	Concentration
CRISTOBALITE	14464-46-1	>=0.1-<0.5%

4. FIRST AID MEASURES

Eyes

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin

Wash off with soap and plenty of water. Do not peel solidified product off the skin.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

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Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Notes to physician

Hazards: Pulmonary edema may be delayed.

Treatment: No hazards which require special first aid measures.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Dry chemical, Carbon dioxide (CO₂), Water spray

Hazardous combustion products

calcium oxide, carbon dioxide and carbon monoxide, Hydrocarbons, Hydrogen cyanide (hydrocyanic acid), Isocyanates, Nitrogen oxides (NO_x), Polymers decompose under fire conditions. The smoke may contain polymer fragments of varying composition and unidentified toxic and/or irritating compounds.

Precautions for fire-fighting

During a fire, irritating or toxic decomposition products may be generated. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

NFPA Flammable and Combustible Liquids Classification

Combustible Liquid Class IIIB

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions

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Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system.

Methods for cleaning up

Keep in suitable, closed containers for disposal. Use rags or other absorbent material to soak up any unmixed prepolymer or curative that has spilled. Use an aqueous solution of ammonia or other suitable isocyanate neutralizing solution to clean up any unreacted prepolymer residue. Do not use neutralizing solution on a large spill, as heat may be generated when using a neutralizing solution to clean up an isocyanate spill. The presence of residual isocyanate contamination may be checked using a Swype test kit. Use a suitable solvent, such as isopropanol, methyl ethyl ketone or acetone, to clean up up residual curative. Use rags or other absorbent material to soak up spilled mixed adhesive that has not cured. Use a suitable solvent, such as isopropanol, methyl ethyl ketone or acetone, to clean up residual adhesive. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into containers.

Other information

Comply with all applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage

Store in a cool, dry, ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

PART A

POLYMETHYLENE POLYPHENYL ISOCYANATE	9016-87-9
CAD AB OEL	time weighted average 0.005 ppm

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CAD AB OEL	time weighted average	0.07 mg/m3	
CAD BC OEL	time weighted average	0.005 ppm	
CAD BC OEL	Ceiling Limit Value:	0.01 ppm	
OEL (QUE)	time weighted average	0.005 ppm	
OEL (QUE)	time weighted average	0.051 mg/m3	
CAD BC OEL	time weighted average	0.005 ppm	
CAD BC OEL	Ceiling Limit Value:	0.01 ppm	
CAD ON OEL	time weighted average	0.005 ppm	
CAD ON OEL	Ceiling Limit Value:	0.02 ppm	
CAD MB OEL	time weighted average	0.005 ppm	
4,4'-DIPHENYLMETHANE DIISOCYANATE		101-68-8	
CAD AB OEL	time weighted average	0.005 ppm	
CAD AB OEL	time weighted average	0.05 mg/m3	
CAD BC OEL	time weighted average	0.005 ppm	
CAD BC OEL	Ceiling Limit Value:	0.01 ppm	
CAD ON OEL	time weighted average	0.005 ppm	
CAD ON OEL	Ceiling Limit Value:	0.02 ppm	
OEL (QUE)	time weighted average	0.005 ppm	
OEL (QUE)	time weighted average	0.051 mg/m3	
CAD MB OEL	time weighted average	0.005 ppm	
METHYLENE DIPHENYLISOCYANATE		26447-40-5	
CAD BC OEL	time weighted average	0.005 ppm	
CAD BC OEL	Ceiling Limit Value:	0.01 ppm	

PART B

LIMESTONE		1317-65-3	
CAD AB OEL	time weighted average	10 mg/m3	
CAD BC OEL	time weighted average	10 mg/m3	Total dust.
CAD BC OEL	time weighted average	3 mg/m3	Respirable fraction.
CAD BC OEL	Short term exposure limit	20 mg/m3	Total dust.
OEL (QUE)	time weighted average	10 mg/m3	Total dust.

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

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Eye protection

Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

Skin and body protection

Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Respiratory protection

Diisocyanates have poor warning properties. An air-purifying respirator with an organic vapor cartridge and an N95 prefilter can be used safely and effectively to reduce exposure, provided that appropriate cartridge change schedules are developed to ensure that cartridges are changed before breakthrough occurs. The employer is required to select the appropriate respirator for each situation and must consider potential exposure to chemicals in addition to diisocyanates.

9. PHYSICAL AND CHEMICAL PROPERTIES

	PART A	PART B
Physical state	liquid	liquid
Form	No data	No data
Colour	brown	No data
Odour	No data	No data
Boiling point/boiling range	No data available	212 °F / 100 °C @ 1,013.33 hPa Calculated Phase Transition Liquid/Gas
Melting point/range	No data available	No data available
pH	No data	6.3
Flash point	201.0 °F / 93.9 °C Seta closed cup	> 200.1 °F / > 93.4 °C Calculated Flash Point
Evaporation rate	No data	> 1 (Ethyl Ether)
Lower explosion limit/Upper explosion limit	No data	No data
Vapour pressure	No data available	31.733 hPa @ 68 °F / 20 °C Calculated Vapor Pressure
Vapour density	No data	(>) 1 AIR=1
Density	1.15 g/cm ³ @ 77 °F / 25 °C 9.57 lb/gal @ 77 °F / 25 °C	1.15 - 1.25 g/cm ³ @ 77 °F / 25 °C 10.0 lb/gal @ 77 °F / 25 °C
Solubility(ies)	No data	No data
Partition coefficient: n-octanol/water	No data	No data
log Pow	No data	No data

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Auto-ignition temperature	No data	No data
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10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

Freezing temperatures., Heat, flames and sparks., Exposure to moisture.

Incompatible products

Acids, Alcohols, alkenes, ammonium salts, aluminum, aluminum salts, Amines, Ammonia, Bases, Copper alloys, Fluorine, Iron, reactive metals such as aluminum and magnesium, strong alkalis, Strong oxidizing agents, water, Zinc

Hazardous decomposition products

calcium oxide, carbon dioxide and carbon monoxide, Hydrocarbons, Hydrogen cyanide (hydrocyanic acid), Isocyanates, Nitrogen oxides (NOx)

Hazardous reactions

Product will not undergo hazardous polymerization.

Thermal decomposition

No data

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

POLYMETHYLENE POLYPHENYL ISOCYANATE	LD 50 Rat: > 10,000 mg/kg
4,4'-DIPHENYLMETHANE DIISOCYANATE	LD 50 Rat: 9,200 mg/kg
METHYLENE DIPHENYLISOCYANATE	LD 50 Rat: > 15,800 mg/kg
CRISTOBALITE	No data available

Acute inhalation toxicity

POLYMETHYLENE POLYPHENYL ISOCYANATE	LC 50 Rat: 369 - 490 mg/m ³ , 4 h
4,4'-DIPHENYLMETHANE DIISOCYANATE	LC 50 Rat: > 2.24 mg/l , 1 h
METHYLENE DIPHENYLISOCYANATE	LC 50 Rat: 490 mg/m ³ , 4 h
CRISTOBALITE	No data available

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Acute dermal toxicity

POLYMETHYLENE POLYPHENYL ISOCYANATE	LD 50 Rabbit: > 10,000 mg/kg
4,4'-DIPHENYLMETHANE DIISOCYANATE	LD 50 Rabbit: > 7,900 mg/kg
METHYLENE DIPHENYLISOCYANATE	LD 50 Rabbit: > 5,010 mg/kg
CRISTOBALITE	No data available

12. ECOLOGICAL INFORMATION

Biodegradability

POLYMETHYLENE POLYPHENYL ISOCYANATE : No data available
4,4'-DIPHENYLMETHANE DIISOCYANATE : No data available
METHYLENE DIPHENYLISOCYANATE : No data available
CRISTOBALITE : No data available

Bioaccumulation

POLYMETHYLENE POLYPHENYL ISOCYANATE : No data available
4,4'-DIPHENYLMETHANE DIISOCYANATE : No data available
METHYLENE DIPHENYLISOCYANATE : No data available
CRISTOBALITE : No data available

Ecotoxicity effects

Toxicity to fish

POLYMETHYLENE POLYPHENYL ISOCYANATE : No data available
4,4'-DIPHENYLMETHANE DIISOCYANATE : No data available
METHYLENE DIPHENYLISOCYANATE : No data available
CRISTOBALITE : No data available

Toxicity to daphnia and other aquatic invertebrates

POLYMETHYLENE POLYPHENYL ISOCYANATE : No data available
4,4'-DIPHENYLMETHANE DIISOCYANATE : No data available
METHYLENE DIPHENYLISOCYANATE : No data available
CRISTOBALITE : No data available

Toxicity to algae

POLYMETHYLENE POLYPHENYL ISOCYANATE : No data available
4,4'-DIPHENYLMETHANE DIISOCYANATE : No data available
METHYLENE DIPHENYLISOCYANATE : No data available
CRISTOBALITE : No data available

Toxicity to bacteria

POLYMETHYLENE POLYPHENYL ISOCYANATE : No data available
4,4'-DIPHENYLMETHANE DIISOCYANATE : No data available

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METHYLENE DIPHENYLISOCYANATE : No data available
CRISTOBALITE : No data available

Biochemical Oxygen Demand (BOD)

POLYMETHYLENE POLYPHENYL ISOCYANATE : No data available
4,4'-DIPHENYLMETHANE DIISOCYANATE : No data available
METHYLENE DIPHENYLISOCYANATE : No data available
CRISTOBALITE : No data available

Chemical Oxygen Demand (COD)

POLYMETHYLENE POLYPHENYL ISOCYANATE : No data available
4,4'-DIPHENYLMETHANE DIISOCYANATE : No data available
METHYLENE DIPHENYLISOCYANATE : No data available
CRISTOBALITE : No data available

Additional ecological information

POLYMETHYLENE POLYPHENYL ISOCYANATE : No data available
4,4'-DIPHENYLMETHANE DIISOCYANATE : No data available
METHYLENE DIPHENYLISOCYANATE : No data available
CRISTOBALITE : No data available

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Dispose of in accordance with all applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
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U.S. DOT - ROAD

Not dangerous goods

U.S. DOT - RAIL

Not dangerous goods

U.S. DOT - INLAND WATERWAYS

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Not dangerous goods

TRANSPORT CANADA - ROAD

Not dangerous goods

TRANSPORT CANADA - RAIL

Not dangerous goods

TRANSPORT CANADA - INLAND WATERWAYS

Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

Not dangerous goods

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

Not dangerous goods

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

WHMIS Classification - PART A

- D1A Very Toxic Material Causing Immediate and Serious Toxic Effects
- D2A Very Toxic Material Causing Other Toxic Effects
- D2B Toxic Material Causing Other Toxic Effects

WHMIS Classification - PART B

- D2A Very Toxic Material Causing Other Toxic Effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

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Canadian National Pollutant Release Inventory (NPRI) - PART A

POLYMETHYLENE POLYPHENYL ISOCYANATE 28.39 %
4,4'-DIPHENYLMETHANE DIISOCYANATE 22.71 %

Canadian National Pollutant Release Inventory (NPRI) - PART B

Notification status

US. Toxic Substances Control Act y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List
(DSL). (Can. Gaz. Part II, Vol. 133) y (positive listing)
Australia. Industrial Chemical (Notification and Assessment) Act y (positive listing)
Japan. ENCS - Existing and New Chemical Substances Inventory y (positive listing)
Korea. Toxic Chemical Control Law (TCCL) List y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act y (positive listing)
China. Inventory of Existing Chemical Substances y (positive listing)

	HMIS		NFPA	
	PART A	PART B	PART A	PART B
Health	2*	1*	3	1
Flammability	1	1	1	1
Physical hazards	1	0		
Instability			1	0
Specific Hazard	--	--	--	--

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).